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EXAMINER	
LE, BRIAN Q	
ART UNIT	PAPER NUMBER
2623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/785,049	Applicant(s) JAEGER, DENNY	
	Examiner Brian Q Le	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27,29-50,95 and 96* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27,29-50,95 and 96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 and 4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The terms "substantially orthogonal", "substantially non-orthogonal", "substantially all said points", and "magic number values" in claims 32-34, 36-38, 48-50 are relative terms which render the claim indefinite. The term "substantially orthogonal", "substantially non-orthogonal", "substantially all said points", and "magic number values" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Further elaborations upon these terms are required.

3. Claim 96 recites the limitation "maximum total reduction" on line 2. There is insufficient antecedent basis for this limitation in the claim.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 96 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation "maximum total reduction" was not described in the specification.

Claim Objections

6. Claims 38 and 47 are objected to because these claims are very difficult to understand due to the use of confusing language. Appropriate correction is required. The prior art rejection based on the Examiner's best understanding.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-7, 10, 12-14, 18, 23, 47-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamakawa U.S. Patent No. 6,144,764.

Regarding claim 1, Yamakawa teaches an electronic device that accepts hand drawn entries, a method for recognizing the hand drawn entries (abstract, first 3 lines), comprising the steps of:

Receiving each hand drawing entry as a plurality of sequential points (FIG. 1B);

Determining the existence and number and angles of vertices in a line which could be drawn between said points (column 7, lines 27-51).

For claim 2, Yamakawa further teaches the method for recognizing hand drawn wherein said at least one step includes determining the distance between said vertices (FIG. 9).

Referring to claim 3, Yamakawa teaches the method for recognizing hand drawn entries wherein said at least one step includes performing a Wide Pen Test (a recognition process that

accounts all points of hand drawn object as defined by the specification on page 3) (FIG. 7 - FIG. 9).

For claim 4, Yamakawa discloses the method for recognizing hand drawn entries wherein said at least one step includes performing a test for Golden Clues (an observed analysis of how people tend to drawn object at real time as defined by the specification on pages 41-42) (column 12, lines 3-25).

Regarding claim 5, Yamakawa also discloses the method for recognizing hand drawn entries wherein said at least one step includes the step of excluding identification of shapes that do not conform to said set of rules (The identification process that only bases on the result of comparison) (abstract).

Also to claim 6, Yamakawa further discloses the method for recognizing hand drawn entries wherein said at least one step includes excluding identification of shapes that do not conform to said set of rules regarding size (the identification process that only bases on the result of comparison and therefore regardless of size) (abstract).

To claim 7, Yamakawa teaches the method for recognizing hand drawn entries further including a plurality of hand drawn entries, each of said hand drawn entries being analyzed individually (column 2, lines 58-67).

Regarding claim 10, Yamakawa teaches the method for programming an electronic device further including the step of using arrow logics to establish attributes of said identified shape (characteristic features) (Abstract, the last 15 lines).

For claim 12, Yamakawa also teaches the method for recognizing hand drawn entries further including the step of carrying out further analytic tests to determine the specific object type (FIG. 16 and FIG. 22).

For claim 13, Yamakawa discloses the method for recognizing hand drawn entries wherein said at least one step includes determining the angular trend of said plurality of sequential points (FIG. 9 and FIG. 10).

Regarding claim 14, Yamakawa also discloses the method for recognizing hand drawn entries further including the step of excluding identification of shapes that do not conform to said set of rules regarding angular trend (The process of extracting shapes into angular properties and compare with shapes in the dictionary with similar angular rules) (column 8, lines 5-50).

For claim 18, Yamakawa teaches the method for recognizing hand drawn entries further including the step of generating at least one identifiable geometric shape inscribed in said bounding rectangle (FIG. 7 and FIG. 8), and comparing the coincidence of said points (similarity measurement) of said hand drawn entry with a wide pen stroke defining at least one identifiable geometric shape (column 8, 43-67 and FIG. 20).

Referring to claim 23, Yamakawa further teaches the method for recognizing hand drawn entries further including the step of determining the angular orientation of said hand drawn entry with respect to a reference orientation (FIG. 11- FIG. 14).

Regarding claim 47, Yamakawa teaches the method further including the step of weighting the importance of the comparison of results to said set of rules, whereby some comparison results are accorded more importance in determining the identified shape (abstract).

Regarding claim 48, Yamakawa further teaches the method for recognizing hand drawn entries wherein said results of said at least one step include numerical parameters that correspond to characteristics of said hand drawn entry, said numerical parameters being compared to a stored magic number values (column 9, lines 35 – lines 55).

For claim 49, please refer back to claim 5 for the explanation.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 8-9, 11, 15-17, 19-23, 26-27, 50, 95-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yamakawa U.S. Patent No. 6,144,764 and Capps U.S. Patent No. 5,583,542 as applied to claim 1 above.

Regarding claim 8, as discussed previously, Yamakawa teaches the analysis of single entity. However, Yamakawa does not teach the lines being agglomerated (close proximity). Capps teaches the hand drawn recognition process wherein the object being agglomerated (close proximity) (FIG. 4, elements 114-116). Modifying Yamakawa's method of hand drawn recognition process according to Capps would able to further determine the overlap region of the hand drawn characters by using the agglomeration technique. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Yamakawa according to Capps.

For claim 9, Capps further teaches the method for recognizing hand drawn entries further including a plurality of hand drawn entries of different colors, said set of rules including color rules (recognition process depends on pixel values) to determine agglomeration of said entries as a single entity (column 12, lines 59-61).

Regarding claim 11, Yamakawa does not teach the concept of creating an info window for at least one of said identified shapes, said info window enabling setting and altering attributes for said at least one identified shape. However, Capps teaches this concept (FIG. 2). Modifying Yamakawa's method of hand drawn recognition process according to Capps would able to further providing an info window to enable the setting and alter object's attributes. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Yamakawa according to Capps.

For claim 15, Yamakawa does not teach the method for recognizing hand drawn entries wherein said step of measuring the size includes the step of generating a minimum bounding rectangle to circumscribe the hand drawn entry. Capps teaches this concept (FIG. 14, element 314). Modifying Yamakawa's method of hand drawn recognition process according to Capps would able to further decompose the object into smaller objects for further overlapping analysis. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Yamakawa according to Capps.

Regarding claim 16, Capps further teaches the method for recognizing hand drawn entries further including the step of determining the size of said bounding rectangle, and comparing said size to size rules for at least on identifiable shape (column 2, lines 35-50).

For claim 17, please refer back to claim 15 for the explanation.

Regarding claim 19, Yamakawa does not teach the concept of pen stroke is selected to be a predetermined width and further including the step of adaptively altering said predetermined wide pen stroke width. However, Capps teaches the method for recognizing hand drawn entries wherein pen stroke is selected to be a predetermined width, and further including the step of adaptively altering (merging process) said predetermined pen stroke width (predetermined threshold length) (column 10, lines 6-21). Modifying Yamakawa's method of hand drawn recognition process according to Capps would be able to alter the predetermine pen stroke to generate the appropriate pen stroke width. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Yamakawa according to Capps.

For claim 20, Capps further teaches a method for recognizing hand drawn entries wherein the identifiable geometric shape yielding a degree of coincidence greater than a predetermined coincidence threshold is determined to be the shape of said hand drawn entry (column 11, lines 15-26).

For claim 21, Capps also teaches the method for recognizing hand drawn entries further including the step of adaptively altering said coincidence threshold (predetermined threshold amplitude variation).

Referring to claim 22, please refer back to claim 13 for the explanation.

For claim 23, Capps discloses the method for programming an electronic device including the step of drawing at least one arrow from an attribute shown in an info window to at least one identified shape outside said info window (FIG. 3A – 3E).

Regarding claim 26, Capps further teaches the method for recognizing hand drawn entries further including the step of determining the proximity of said hand drawn entry to another graphic object (FIG. 4, elements 114-116).

For claim 27, Capps also teaches the method for recognizing hand drawn entries further including the step of excluding identification of shapes that do not conform to said set of rules regarding maximum proximate distance to said another graphic object (FIG. 6, element 170).

Regarding claim 50, Yamakawa does not teach the concept wherein magic number values can be selectively varied by user input. Capps teaches the concept where numeric information can be entered into the pen-based computer system. Modifying Yamakawa's method of hand drawn recognition process according to Capps would be able to the user to enter numerical values through the user input mean. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Yamakawa according to Capps.

Regarding claim 95, please refer back to claim 23 for the explanation.

Regarding claim 96, Capp also teaches the predetermined angle threshold is determined by a user-defined parameter (column 14, lines 3-33 and column 1, lines 47-49).

10. Claims 29-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yamakawa U.S. Patent No. 6,144,764 and Meeks U.S. Patent No. 5,347,589 as applied to claim 1 above.

Regarding claim 29, Yamakawa does not teach the method for recognizing hand drawn entries further including the step of identifying a portion of said hand drawn entry drawn more slowly than other portions of said hand drawn entry. However, Meeks teaches a method of recognizing hand drawn wherein the step of identifying hand drawn portions at different rates

(column 3, line 1). Modifying Yamakawa's method of hand drawn recognition process according to Meeks would be able to adjust the recognition speed at various portions of hand drawn for better hand drawn recognition since human hand drawn rate is various. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Yamakawa according to Meeks.

For claim 30, Yamakawa teaches the method further including the step of determining the existence of a vertex in said portion of said hand drawn entry, and calculating the vertex angle (FIG. 9 and FIG. 10).

Referring to claim 31, Yamakawa also teaches the method for recognizing hand drawn entries wherein said portion of said hand drawn entry is identified by storing and analyzing time of entry data of said plurality of points (column 12, lines 5-25).

Regarding claim 32, Yamakawa also teaches the method for recognizing hand drawn entries wherein if a vertex angle in said portion of said hand drawn entry is substantially orthogonal (FIG. 5A – FIG. 5B), said golden clue test provides increased potential for identifying a rectilinear shape (column 7, lines 30-35).

For claim 33, Yamakawa teaches the method for recognizing hand drawn entries wherein if a vertex angle in said portion of said hand drawn entry is substantially non-orthogonal, said golden clue test provides increased potential for exclusion of all rectilinear shapes (FIG. 9).

For claim 34, Yamakawa discloses the method for recognizing hand drawn wherein if a pair of vertex angle in said portion of said hand drawn entry are substantially orthogonal, proximate, and opposite, said golden clue test provides increased potential for identification of a folder shape (FIG. 9).

Regarding claim 35, Yamakawa teaches the method for recognizing hand drawn entries wherein said golden clue test includes identifying a first-drawn portion of said hand drawn entry, determining the existence of a vertex in said first drawn portion of said hand drawn entry, and calculating the vertex angle (FIG. 1(b) and FIG. 4).

Regarding claims 36-37, please refer back to claims 32-33 for further explanation.

For claim 38, Yamakawa discloses the method further including a slice step of identifying three of said points that are adjacent and spaced apart greater than a minimum pixel length distance, constructing an angle defined by said three points, measuring the constructed angle, and reiterating said slice step in serial fashion with consecutive points of said hand drawn entry to include substantially all said points of said hand drawn entry (FIG. 9).

Also to claim 39, Yamakawa also teaches the method further including the step of storing the angle measurement of a slice when it exceeds a predetermined angle threshold (column 8, lines 38-42).

Regarding claim 40, Yamakawa also teaches the method for recognizing hand drawn entries further including the step of reducing said predetermined angle threshold whenever said reiterated slice step yields and angular measurement less than said predetermined angle threshold (FIG. 7, lines 28-67).

For claim 41, Yamakawa discloses the method wherein if an angle measurement of a given slice step exceeds said predetermined angle threshold, and the angle measurement of the subsequent slice step is less than said predetermined angle threshold, a vertex is identified in the portion of said hand drawn entry containing said given slice step (column 7, lines 25-67).

Also to claim 42, Yamakawa also teaches the method wherein the step includes detecting and storing the first pen down location of said hand drawn entry (FIG. 7 and FIG. 8).

For claim 43, Yamakawa further teaches the step of detecting and storing the direction of the pen stroke of said hand drawn entry (column 8, lines 35-42).

Referring to claim 44, Yamakawa does not explicitly teaches the step of measuring the speed of drawing said hand drawn entry. However Meeks teaches this limitation (FIG. 1 element 14). Modifying Yamakawa's method of hand drawn recognition process according to Meeks would be able calculate the speed of hand drawn. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Yamakawa according to Meeks.

Referring to claim 45, Meeks teaches the detecting point-to-point spacing said sequential points of said hand drawing entry (FIG. 3B).

For claim 46, Meeks teaches the method wherein said speed of drawing is determined by recording the time of entry of each of said sequential points, and calculating the speed of drawing from said time of entry data (FIG. 1, element 14 and column 4, lines 55-61).

CONCLUSION

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to hand drawn recognition and processing:

U.S. Pat. No. 5,781,663 to Sakaguchi, teaches system for recognizing various input data types.

U.S. Pat. No. 6,643,401 to Kashioka, teaches apparatus and method for recognizing character.

U.S. Pat. No. 5,745,599 to Uchiyama, teaches character recognition method.

U.S. Pat. No. 6,415,256 to Ditzik, teaches integrated handwriting and speed recognition systems.

U.S. Pat. No. 6,681,044 to Ma, teaches retrieval of cursive Chinese handwritten annotations based on radical model.

U.S. Pat. No. 5,133,053 to Bier, teaches interactive graphical search and replace utility for computer-resident synthetic graphic image editors.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 703-305-5083. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC Customer Service whose telephone number is 703-306-0377.

BL
February 16, 2004

SAMIR AHMED
PRIMARY EXAMINER